

REMARKS

As a preliminary matter, the withdrawal of the previous rejections is acknowledged and appreciated. However, the newly asserted rejections based upon Ryu suffer similar defects from the prior rejections. The rejections of claims 1-13 and 15-24 are traversed, as indicated below. As claim 14 was indicated allowable, it is rewritten in independent form.

Claim interpretations that were incorrect when applied in the first office action are again incorrect. The “coherence length” feature of claims 1-13 and 15-24 is again misinterpreted as encompassing any arrangement of “rows and columns”, which is incorrect. Also, despite the application of Ryu, which is another plasma display panel not at all concerned with or configured to be capable of producing phase locked response, the examiner concludes without basis that it is “a phase-locked” micro discharge array as in claims 1-13 and 15-24.

Also, the application of the new Ryu reference from the general plasma display panel art indicates that the “microdischarge cavity” feature of claims 1-13 and 15-25 is not being given a correct interpretation. A microdischarge cavity does not read upon the spaces between the barrier ribs of a normal plasma display panel (whether or not they include an additional groove 54b as in Ryu). The broadest reasonable interpretation of microdischarge cavity as used in the present specification does not properly read upon the spaces between barrier ribs in the applied references. In an effort to expedite prosecution, claims 1, 20, 21

and 25 have been amended to address the incorrect interpretation of “microdischarge cavity”.

The amendments require the cavities sized to “produce plasma” within the cavities. See, page 6, lines 16-21. This amendment does not narrow the scope of the claims, but merely explicitly incorporates the definition that should have been applied to the claims as originally written.

Claims 1-4, 6, 10, 11 and 16-18 stand rejected under § 102 as being anticipated by Ryu, U.S. Patent 6,456,007. The rejection is respectfully traversed.

Ryu includes no microdischarge cavities in a substrate. With reference to FIGs. 4-6 and 7, the grooves 54b relied upon by the examiner are not microdischarge cavities. These grooves provide additional area for the fluorescent coating 58, as described in column 4, line 30 – column 5, line 37. However, the grooves are not capable of igniting a plasma within the grooves. The plasma is produced against the protection film 15/53 as shown in FIGs. 1 and 5. This was also argued when applicant traversed the previous rejection based upon Mendelsohn, which also uses the standard arrangement for producing a plasma in a plasma display panel.

A complete understanding of a plasma display panel such as that in Ryu further shows that the grooves 54b are not microdischarge cavities. In the operation of a plasma display panel (PDP), it is important to keep the phosphor separate from the plasma. Otherwise, the phosphor will be damaged and/or eroded. The location of the plasma in Ryu is the same as that for typical plasma display panels and is illustrated clearly in Figs. 5 and 7. The semicircle in Fig. 5 with the diverging arrows, although not specifically identified in

Fig. 5, represents the plasma region. It is well-removed from the phosphor coating. In fact, this is the reason for the rib barriers — namely, to prevent plasma radiation from one discharge “leaking into” an adjacent sub-pixel. If the plasma was located within the groove 54b as suggested by the Examiner, the barrier would serve no purpose. This the grooves 54b are clearly not microdischarge cavities.

The amendments to the independent claims that make explicit the microdischarge cavity definition should obviate the incorrect interpretation that has been applied in the office action. Thus, neither Ryu nor Mendelsohn includes any microdischarge cavities, which should demonstrate that all the rejections should be removed.

Also, there is no basis to conclude that Ryu meets the “coherence length” feature of claims 1, 20 and 21. As discussed above, and as was discussed in Amendment A, mere row and column arrangement is not arrangement within a coherence length. While Ryu includes no microdischarge cavities whatsoever, cavities in rows and columns in no way guarantee that the generated plasmas lie within the coherence length. Doing so must be intentional and requires knowledge of the coherence length for a specific atomic emission line. The examiner is again referred to the paragraph of the specification beginning at page 8, line 26 for an explanation of the coherence length spacing.

Also, coherence is undesirable in a plasma display panel. Coherence in the light produced would produce speckling that is readily visible to any observer and would dramatically detract from the quality of the display. Ryu would not strive for and does not produce coherence. Nowhere does Ryu mention phase locking.

There is also a § 103 rejection of claims 5, 7, 8 and 20 based upon Ryu and Mendelsohn, which is defective for the reasons discussed above. Additionally, the rejection is traversed for the following additional reasons.

Previously, the examiner admitted that Mendelsohn failed to disclose anything that approximated a Fresnel pattern (previous office action at page 6). Now, the very same reference is alleged to teach a Fresnel pattern (present office action at page 6). The previous conclusion was correct. There is no teaching whatsoever of a Fresnel pattern in Mendelsohn.

The additional comments of the examiner regarding Mendelsohn on page 6 of the present office action seem to imply that an addressing scheme could be used to achieve a Fresnel pattern. While this is incorrect, it also has nothing to do with the claim language. Claim 5, for example, requires that microdischarge cavities be arranged to approximate a Fresnel pattern. The claim requirements in claims 5, 7, 8 and 20 have to do with the physical arrangement of microcavities, not an operational addressing scheme. It has been admitted that Mendelsohn's physical arrangement is a standard row and column scheme. This does not meet or suggest the claimed arrangements of microdischarge cavities in claims 5, 7, 8 and 20.

Also, the implication that Mendelsohn could be "individually addressed" to "produce an image in the Fresnel pattern or approximately in the rings in Fresnel pattern" is incorrect. Individual addressing of a standard plasma panel does not create a Fresnel pattern, which requires particular spacing and not just a geometrical shape. Regarding Mendelsohn, it is well known that the spacing between electrodes 76 and 78 (which determines the spatial

resolution of the display) cannot be made small (typical spacing is several hundred μm). Therefore, it is not possible to make a Fresnel structure of any reasonable size for visible wavelengths with the Mendelsohn plasma display panel because the Fresnel pattern requires multiple rings in which the ring-to-ring spacing steadily decreases as one moves away from the center of the Fresnel structure. Thus, the required spacing between rings is simply too small to allow the well-known PDP structure of Figs. 1, 2, and 5 of Mendelsohn to make a Fresnel structure of any significant quality. The required modifications are contrary to the basic structure of a plasma display panel, and also contrary to its purpose, which would not benefit from coherence as discussed above.

Claims 9, 21, 22, 24 and 25 stand rejected under 35 U.S.C. §103 over Ryu in view of Horiuchi, US Pat 6,043,604. The rejection is respectfully traversed.

Horiuchi is another reference directed to a standard style plasma display panel. Like Ryu and Mendelsohn, Horiuchi lacks any microdischarge cavities. The examiner identifies the “spacers” in Horiuchi as the substrate, which is a contradiction to a normal interpretation. Clearly, the substrates are the topmost and bottommost parts of the front and rear plates in FIG. 1. If the “barrier rib” is intended to be identified as the substrate, there are no cavities within the barrier ribs. As in a typical plasma display, there are no microdischarge cavities at all.

As for the “product by process” issue, there is a clear requirement in the claims that microdischarge cavities be “into” the substrate/photosensitive glass. There is no corresponding structure in Horiuchi.

The separate rejection of claims 12, 13 and 19 under § 103 in view of Ryu and Stine is also traversed.

Previously, the combination was Mendelsohn/Stine. The current office action substitutes Ryu. Apparently, the examiner views references as being freely interchangeable to fashion rejections, but the legal standard requires specific motivation to do so. The fact the references are being mixed and matched shows that the conclusion of obviousness has been reached independently of the teachings of the art. This is improper.

As a separate basis for traversal, the applied Ryu reference is for producing a display that is “well adapted to a large screen size”. C1, L19-20. No artisan would look to any large format displays suitable for producing an HDTV display, for example, as a device capable of launching power into an optical fiber or other optical transmission medium. Also, the Stine reference is explicitly concerned with producing a “non-coherent but unique field of radiation.” C3, L18-19. Plasma display panels and “non-coherent” displays have nothing to do with invention defined in any of claims 1-24, which use microdischarge cavities to produce a phase-locked coherent output. Regarding claim 25, none of the references disclose a microdischarge cavity sized to produce a plasma in the cavity, as discussed above.

Claim 15 is rejected as obvious over Ryu and Iwaki. The rejection is respectfully traversed.

Iwaki, like Ryu, lacks any microdischarge cavities. Iwaki uses a laser source 1 and a laser source 8 for coherent light. As indicated in the background of the present application, lasers are commonly used for coherent light. The invention defined in the

present claims 1-24 produces partially coherent light without a laser. Nothing in plasma display panels (Ryu) or laser driven holograms (Iwaki) suggests the present invention. Iwaki confirms merely that artisans look to lasers for production of coherent light.

Claim 23 is rejected as obvious over Ryu, Horiuchi and Stine. The rejection is respectfully traversed.

A grating would not be used with a plasma display panel such as disclosed in Ryu or Horiuchi to couple the outputs of separate pixels, as that would defeat the intended purpose of the plasma display panels. Coupling pixels would reduce the resolution and/or distort the displays of Ryu and Horiuchi.

For all of the above reasons, Applicants request reconsideration and allowance of the application. If the Examiner believes that an interview would expedite prosecution, the examiner is invited to contact the undersigned attorney at the below-listed number.

Respectfully submitted,

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